

### DRAWING AMENDMENTS

Enclosed are Replacement Sheets for Figs. 4 and 5 of the drawings.

### REMARKS

Applicant has carefully reviewed the Official Action dated June 28, 2007.

The Examiner's acknowledgement at page 6, paragraph 8 of the Official Action, that Claim 8 is directed to allowable subject matter, is gratefully acknowledged by Applicant. However, for the reasons to be discussed below, Applicant submits that all pending claims, as amended herein, are also in condition for allowance.

At page 2, paragraph 1 of the Official Action, the Examiner has objected to Figs. 4 and 5 of the drawings on the grounds that the reference numerals, lead lines, and wording are handwritten. In response to this objection, enclosed are Replacement Sheets for Figs. 4 and 5 of the drawings, overcoming the objections raised in the Official Action.

At page 2, paragraphs 2 - 3 of the Official Action, the Examiner has objected to the Abstract of the Disclosure. In response to this objection, enclosed is a Replacement Abstract of the Disclosure overcoming the grounds for objection raised in the Official Action.

At page 3, paragraph 4 of the Official Action, the Examiner has objected to the disclosure at page 4, line 15. In response to this objection, Applicant has amended the Specification to overcome this objection.

At page 3, paragraph 5 of the Official Action, Claims 1 - 20 have been objected to as being informal for the reasons noted in the Official Action. In response to the Official Action, Applicant has amended the pending claims to overcome the informalities noted by the Examiner in Paragraph 5 of the Official Action. The claims, as amended herein, provide the necessary antecedent basis for all recitations. Additionally, all reference numerals have been deleted from the claims.

At page 4, paragraph 7 of the Official Action, Claims 1 - 7 and 9 - 20 have been rejected as being anticipated by U.S. Patent No. 2,979,320 (Adams). For the reasons to be discussed below, Applicant respectfully submits that the claims, as amended herein, are clearly allowable over the applied prior art reference.

Applicant initially notes that independent Claim 1 has been revised to include the features of dependent Claims 3, 5 and 6. These dependent claims have been cancelled, without prejudice,

since the features of these claims are now included in independent Claim 1.

Dependent Claims 19 and 20 have also been cancelled, without prejudice, because the features of these claims are now included in independent Claim 1.

Additionally, Claim 16 has been rewritten in independent form to include the features of independent Claim 1 and dependent Claim 16.

The dependencies of claims have been revised, where appropriate, to reflect the revisions to Claim 1 and the cancellation of Claims 3, 5, and 6.

Independent Claim 1, as been amended herein, defines a force transmitting means provided between each rotation joint and a holder for one of the horizontal jacks forming the horizontal stabilizing means. As discussed at page 2, lines 10 - 16 of Applicant's Specification, rotation joints directly attached to the substructure of the boring rig separated along the first direction increases the rigidity of the construction. The increased rigidity of the construction is further enhanced by the force transmitting means provided between each rotational joint and adjacent holder for a horizontal jack forming the horizontal

stabilizing means. In this manner, forces occurring during boring are transmitted and resisted in an effective way.

As recognized in Applicant's Specification, it is important to realize that the large forces resulting from a boring operation can be harmful to the equipment used in the boring operation. The apparatus disclosed by the Adams patent which does not include the force transmitting means and related structure and structural arrangement, as now specifically recited in independent Claim 1, results in instability, poor performance, and the need to reduce boring power, resulting in instability and inefficient operation.

In addition to the above, independent Claim 1, as revised herein, expressly recites vertical stabilizing means. Applicant submits that the Adams patent does not teach or suggest any vertical stabilizing means. Therefore, the means on the boring unit of the Adams device are never vertical, and accordingly yield produced by the Adams device fall onto the equipment which is highly undesirable. The skids disclosed by the Adams patent perform a function other than vertical stabilization.

In the Official Action, the Examiner states that element 43 disclosed in the Adams patent is a vertical stabilizing means. The Official Action further states that "...It is noted that

Figure 1 shows the boring unit (26) and the vertical stabilizing means (43) not fully vertical, but this is merely an exemplary boring position and the actuator, or jacks, (37) allow the unit and stabilizing means to reach more of a near vertical position when the jack is fully expanded (col. 3, lines 4 - 20)."

Applicant respectfully disagrees with the Examiner's conclusion. There is no disclosure in the Adams patent that the structure thereof is capable of rotating the unit into a substantially vertical position, and holding the unit in that position by the jacks 43. As noted above, since the boring unit disclosed by the Adams patent is never substantially vertical, the yield will fall directly on the boring equipment, which is highly undesirable.

Independent Claim 1 has also been revised to expressly recite that the vertical stabilizing means are directly attached to the substructure. This feature of the invention is shown by Figure 4 of the drawing illustrating vertical stabilizing means 35 and 36 attached directly to the substructure section 22, and vertical stabilizing means 37 attached directly to substructure section 21 (See also, page 7, lines 9 - 12 of the Specification). The direct connection between the vertical stabilizing means and the substructure 21, 22 enhances the stability of the boring rig,

particularly when the boring unit is in a substantially vertical position.

Contrary to this feature of Applicant's invention, the jacks 43 (which are considered to be vertical stabilizing means in the Official Action) are not directly attached to the substructure 35 (which was incorrectly identified as element 33 in the Official Action), and therefore will not provide the enhanced stability that is provided by the boring rig defined by Applicant's independent Claim 1. Moreover, as noted above, Applicant submits that there is no disclosure in the Adams patent that the boring unit be rotated into a substantially vertical operating position.

With regard to independent Claim 16, this claim now recites that the boring rig includes a control unit for controlling setting of the stabilizing means and for controlling boring unit positioning and elevation. This feature of Applicant's invention is discussed at page 3, lines 3 - 15, and page 9, first paragraph of Applicant's Specification. Applicant respectfully submits that the Adams patent does not teach the control unit as now specifically recited in independent Claim 16, or the numerous advantages resulting therefrom as discussed in Applicant's specification. Moreover, the control unit as expressly recited in independent Claim 16 controls the setting of the claimed stabilizing means, including both the horizontal and vertical

stabilizing means, expressly recited in independent Claim 16. As discussed more fully above with respect to independent Claim 1, Applicant respectfully submits that the Adams patent does not teach vertical stabilizing means, as disclosed and claimed by Applicant. Therefore, the Adams patent likewise cannot teach the control means controlling the setting of the vertical stabilizing means, as disclosed in Applicant's specification and as expressly recited in independent Claim 16 as amended herein.

As discussed above with respect to independent Claim 1, independent Claim 16 expressly recites that the vertical stabilizing means are directly attached to the substructure. As also discussed above with respect to independent Claim 1, this feature of Applicant's invention results in enhanced stability of the drilling rig, particularly when it is rotated into a substantially vertical position. The Adams patent clearly does not teach or suggest this feature of the invention because the jacks 43 (which are considered to be vertical stabilizing means in the Official Action) are not directly attached to the substructure 35.

In addition to the advantages of Applicant's drilling rig defined by independent Claims 1 and 16, as discussed above, Applicant also notes that the stabilizing arrangement included in the boring rigs expressly defined by independent Claims 1 and 16



provide more secure contact with the rock face than the arrangement disclosed by the Adams patent, where the stabilizing means contact the rock face at a small angle.

Dependent Claim 6 (the features of which are now included in revised independent Claim 1) and independent Claim 16 (which has now been rewritten in independent form) were rejected under 35 U.S.C. Section 102(b) as being anticipated by the Adams patent. It is well established that a rejection of a claim as being anticipated by a prior art reference requires the Patent & Trademark Office to establish a strict identity of invention between each rejected claim a single applied prior art reference. Stated in other words, a rejection of a claim as being anticipated by a prior art reference is not proper unless all features of the rejected claim, as arranged in the claim, are disclosed by the single applied prior art reference. See, for example, Connell v. Sears, Roebuck & Co., 220 USPQ 193 (Fed. Cir. 1983).

In the instant case, Applicant respectfully submits that the Adams patent does not teach (or suggest) boring rigs defined by independent Claims 1 and 16, as amended herein, when each of these claims is considered in its entirety, and when all recited structure and structural arrangement is considered in the patentability determination. As discussed herein, the Adams

patent does not disclose all features recited by independent Claims 1 and 16, and does not recognize the advantages resulting from the structure and structural arrangement of the boring rigs defined by the claims.

Applicant respectfully submits that independent Claims 1 and 16 are in condition for allowance. The remaining dependent claims, which depend directly or indirectly from at least one of the independent claims, are allowable at least for the same reasons as their respective independent parent claims.

Dependent Claim 8 which was indicated as containing allowable subject matter but was objected to as depending from a rejected parent claim, will be in proper form for allowance upon the allowance of parent independent Claim 1.

Applicant respectfully submits that all pending claims are in condition for allowance, and favorable action is respectfully requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Mark P. Stone', with a stylized flourish at the end.

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REPLACEMENT PARAGRAPH -  
PAGE 4, LINES 15 - 24

In the figs. 1 - 3, 10 ~~is shown~~ shows a rock having a relatively thin ore-bearing formation 11 extending therethrough. The extension and approximate thickness of the ore-bearing formation has been determined by drilling from the surface of the ground above the formation. A drift 12 has been made through the rock so as to have the ore-bearing formation 11 extending therealong. The extension (in one direction) and approximate thickness  $t$  of the ore-bearing formation determined is indicated in Figs. 1 and 3 by two spaced dashed lines extending along the drift.